**PerpleXing Polygons**

Each polygon uses one operation to form its own pattern. Discover the operation. Then determine how the numbers in the bold triangle are related and write the one-step equation that fits the pattern for each polygon. Then solve for X. ***(Answers shown are samples and other equations are possible.)***

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| --- | --- | --- | --- | --- |
| **What is my pattern?** | | | **Write the equation.** | **Solve for X.** |
| **15**  **20**  **10**  **2**  **2**  **X**  **5**  **6** | For the pair of opposite sides with all numbers showing: 2 3=6 and 5 3 =15,  so the operation is **multiplication. The** pattern is (*# in triangle)3 = # in hexagon* **OR** 63 = 2 and 153 = 5 so the operation is **division.** The pattern is  *(# in hexagon3 = # in triangle*  The pattern for the other sides:  2 5 = 10 or ( # in 5 = # in  10 5 = 2 or (# in ) 5 = # in | | Using  2 5 = 10 or ( # in 5 = # in  The equation is  x5 = 20  OR  10 5 = 2 or (# in ) 5 = # in  20 5 = x | x5 = 20  x = 4  OR  20 5 = x  4 = x |
| **X**  **5**  **8**  **2**  **6**  **4**  **10**  **4**  **1**  **2**  **3**  **6** | | Operation is addition | x + 2 = 11 | x = 9 |
| **7**  **2**  **6**  **20**  **14**  **3**  **10**  **5**  **4**  **X**  **5**  **8** | | Operation is multiplication | 20 x = 40 | x = 2 |
| **17**  **9**  **75**  **16**  **4**  **55**  **33**  **15**  **29**  **22**  **30**  **X** | | Operation is subtraction | x – 75 = 22 | x = 53 |

Now it is time for you to create your own perplexing polygon pattern. Let your partner try to discover your pattern.